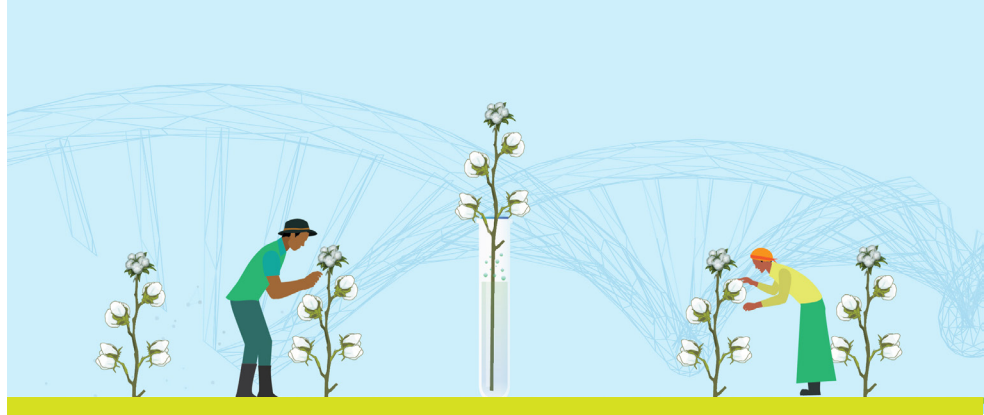


A man with glasses and a green lab coat is holding a small green plant in a clear glass container. The background is blurred, showing a laboratory setting. A large green circle with a white border is overlaid on the left side of the image, containing white text.

KENYA TOP TEN  
FACTS ABOUT  
**AGRI-BIOTECH &  
BIOSAFETY**

# FACT 01



## Kenya joins six other African countries who have commercialized genetically modified (GM) cotton

1. In December 2019, the cabinet approved open cultivations of Bt cotton. The country now joins six other African countries who have commercialized genetically modified (GM) cotton i.e. South Africa, Sudan, Malawi, Nigeria, Kingdom of eSwatini and Ethiopia.
2. The Kenya Agricultural and Livestock Research Organization (KALRO) is the main agency undertaking cotton research in Kenya. The first application to introduce genetically modified insects resistant cotton (Bt cotton) was made in 2001. KALRO successfully completed the national performance trials for Bt cotton in 2019 after which approval for cultivation was granted.
3. The Kenyan government, through its Big Four Agenda, is banking on Bt cotton to create 50,000 jobs and generate Sh20 billion in apparel export earnings per year. Cotton production has remained very low due to numerous challenges in the country, key among them pests and low quality seed. Introduction of Bt cotton will address some of these challenges.

**You can download the Big Four Agenda from:**  
<https://big4.delivery.go.ke/>



*"I have instructed the ministries of health, agriculture and trade, industry and co-operatives to work together and come up with a quick mechanism to revive the production of cotton - including the possibility of farming Bt cotton"*

**UHURU KENYATTA**  
President of the Republic of Kenya



# FACT 02

## Kenya is among four African countries conducting research on genetically modified disease resistant cassava

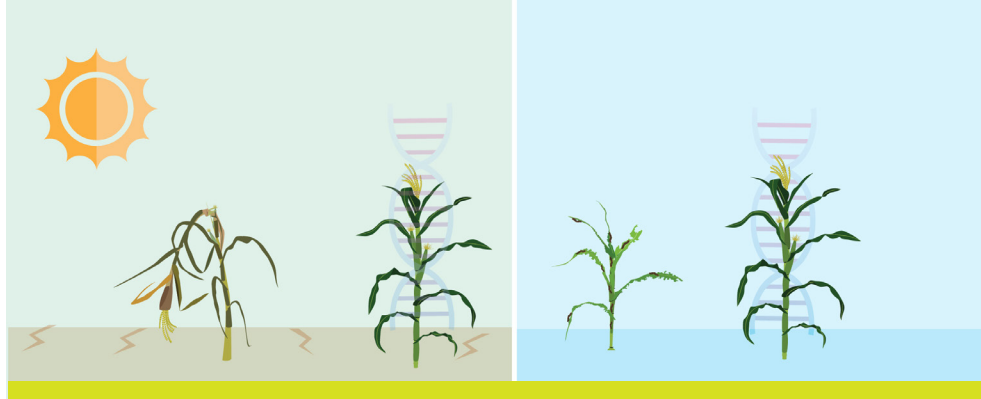
1. The Virus Resistant Cassava for Africa (VIRCA) Plus project has successfully developed a cassava line with robust and durable resistance to cassava brown streak disease (CBSD), which has been validated over multiple cropping cycles in several locations in Kenya and Uganda.
2. VIRCA Plus is a collaborative program between KALRO and several public and non-governmental organisations working in Kenya, Nigeria, Rwanda, Uganda and USA. In Kenya, the project is conducted collaboratively by KALRO, University of Nairobi scientists and ISAAA AfriCenter who provide communications and policy support.
3. KALRO submitted an application for open field cultivation of the GM cassava to the National Biosafety Authority in March 2020. Once approved for environmental release and placing on the market, seed multiplication and distribution of the disease resistant cassava will follow existing seed delivery systems and will be readily available at a comparable cost to conventional cassava.



*KALRO Director General Dr. Eliud Kireger (in blue coat) during a field visit to a GM cassava experimentation site*



# FACT 03



## Kenya commenced National Performance Trials (NPTs) of insect resistant (Bt) maize in 2020



*A farmer poses for a photo during a visit to Bt Maize CFT site*

1. The Bt maize research is conducted under the TELA project, a public-private partnership coordinated by the African Agricultural Technology Foundation (AATF). The project's aim is to address challenges brought about by destructive insects such as stemborers and is implemented in 7 African countries: Ethiopia, Kenya, Mozambique, Nigeria, South Africa, Tanzania and Uganda.
2. In Kenya, two seasons of Confined Field Trials (CFTs) have produced promising results with the Bt maize recording considerable yield advantage over the conventional counterpart under mild drought and stem borer infestation.
3. National Performance Trials (NPTs) carried out in 6 locations across the country have been completed and 3 varieties recommended to be advanced to commercial release once and when approval decision is granted by National Biosafety Authority (NBA).



## Kenya has a well-structured mechanism for creating awareness on biotech crops

1. The International Service for the Acquisition of Agri-biotech Applications (ISAAA) AfriCenter pioneered awareness creation activities in the nineties. Over the last two decades, AfriCenter in partnership with the Open Forum on Agricultural Biotechnology (OFAB-Kenya) and National Commission for Science, Technology and Innovation continues to be at the forefront in raising awareness on all aspects of agricultural biotechnology and biosafety through various approaches including seeing-is-believing biotech study tours.
2. In September 2006, the African Agricultural Technology Foundation (AATF) launched OFAB, a platform aimed at complementing efforts on the ground to improve public understanding and awareness on agricultural biotechnology and increased media coverage.
3. Other initiatives and organizations involved in awareness creation include the government initiative - BioAWARE, Kenya Agricultural and Livestock Research Organization (KALRO), Africa Harvest, Kenya University Biotechnology Consortium (KUBICO), as well as the mass media and several civil society groups.



*Launching OFAB - Kenya Chapter in 2006 by Dr. Noah Wekesa then, Minister for Science and Technology*

# FACT 05

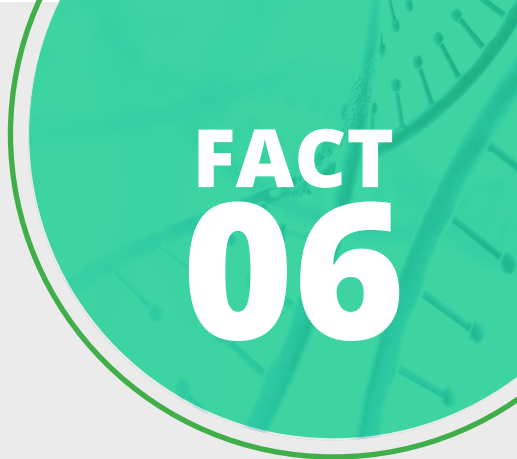


## Kenya has the Scientific Infrastructure and Human Capacity for Biotechnology



*A scientist working in a GM research lab at BecA, ILRI*

1. Kenya has the infrastructure and capacity needed for research and regulation of biotech crops. Currently, there are over 100 scientists engaged in research and development (R&D) activities countrywide, with 45% of these scientists working in the public sector. Biosafety facilities for modern biotechnology include a Level II Greenhouse at the Kenya Agricultural and Livestock Research Organization (KALRO) and the Plant Transformation Laboratory at Kenyatta University.
2. National universities have established strong research programs for training young scientists on modern biotechnology. They include, among others:
  - I. Kenyatta University
  - II. Jomo Kenyatta University of Agriculture and Technology
  - III. Masinde Muliro University of Science and Technology
  - IV. University of Nairobi
  - V. Egerton University
  - VI. University of Eldoret
3. The country hosts various international research organizations under the CGIAR group working on GM research and is home to the Biosciences eastern and central Africa (BecA) regional hub, a world-class research facility nestled at the International Livestock Research Institute (ILRI).



## Kenya was the first country to sign the Cartagena Protocol on Biosafety

1. The former President Daniel Arap Moi signed the international treaty governing the movement of living modified organisms resulting from modern biotechnology from one country to the other during the 5th Conference of Parties in May 2000 at UNEP headquarters, Nairobi. The country ratified the Protocol in 2003.
2. The Protocol's objective is to contribute to ensuring an adequate level of protection in safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking into account risks to human health and specifically focusing on trans boundary movements.
3. The Cartagena Protocol on Biosafety to the Convention on Biological Diversity laid down the necessary platform for implementation of National Biosafety Frameworks and establishment of effective biosafety management systems.

**You can download the Protocol from:**

<https://www.cbd.int/doc/legal/cartagena-protocol-en.pdf>



*Former President Daniel Arap Moi signing the Cartagena Protocol*



# FACT 07



*Former president Mwai Kibaki opening a state of the art GM research lab in the country*



## Kenya Approved a National Policy on Biotechnology Development in 2006

1. The Kenya government's vision and commitment towards promotion and application of biotechnology is articulated in the National Biotechnology Development Policy that was endorsed by Cabinet in 2006.
2. This policy outlines the government's commitment to safe development and deployment of biotechnology for socio-economic development.
3. The policy charts a vision towards the development and safe application of biotechnology, to guide research and commercialization of modern biotechnology products in the country.

**You can download the policy from:**

[http://en.biosafetyscanner.org/pdf/doc/350\\_allegato.pdf](http://en.biosafetyscanner.org/pdf/doc/350_allegato.pdf)





## Kenya Enacted its Biosafety Act in 2009

1. The Kenya Biosafety Bill was drafted in 2005. After several years of stakeholder consultations and parliamentary debates, the Bill was eventually passed by Parliament in 2008, and enacted into law on 12th February 2009 as Biosafety Act No.2 of 2009.
2. The Act lays down legal and institutional frameworks for governing modern biotechnology in the country. It ensures that Kenya maximizes the benefits of modern biotechnology while safeguarding against any potential risks to human health and adverse effects to the environment.
3. The Act was revised in 2018 to align it to Mwongozo, a Code of Governance for State Corporations aligned to Kenya constitution.

**You can download the act from:**

<http://africenter.isaaa.org/wp-content/uploads/2015/07/Biosafety-Act-No.2-of-2009.pdf>



*Kenya's Agriculture Cabinet Secretary (in flowered shirt) and his Devolution counterpart (in black) get ready to plant Bt cotton seed as Governor Sospeter Ojiamong (in red tie) looks on.*

# FACT 09

## DECISIONS ON GMO APPLICATIONS MADE BY NBA SINCE 2010

| Status    | Lab/<br>Green-<br>house<br>Trials | Confined<br>Field<br>Trials | Import<br>And<br>Transit | Limited<br>Open<br>Cultiva-<br>tion |
|-----------|-----------------------------------|-----------------------------|--------------------------|-------------------------------------|
| Approved  | 32                                | 14                          | 28                       | 2                                   |
| Withdrawn | 0                                 | 0                           | 2                        | 0                                   |
| Rejected  | 0                                 | 0                           | 0                        | 1                                   |
| Pending   | 1                                 | 0                           | 0                        | 1                                   |
| Total     | 33                                | 14                          | 30                       | 4                                   |



## The National Biosafety Authority was Officially Launched in May 2010

1. The National Biosafety Authority (NBA) was established through a provision of the Biosafety Act 2009, as the competent authority to provide overall supervision and monitoring of GMO research and commercialization activities.
2. To achieve its mandate, the authority works closely with eight regulatory agencies:
  - I. Kenya Plant Health Inspectorate Service
  - II. Directorate of Veterinary Services
  - III. Department of Public Health
  - IV. Kenya Bureau of Standards
  - V. National Environment Management Authority
  - VI. Kenya Wildlife Service
  - VII. Kenya Industrial Property Institute
  - VIII. Pest Control Products Board
3. As of September 2020, the authority had handled over 70 applications in four categories of GMO activities.



## The National Biosafety Authority has Published Four Sets of Biosafety Regulations

1. The four regulations as stipulated in the Kenya Legislative Supplements of the Biosafety Act, 2009 are:

- I. The Environmental Release Regulations (2011)
- II. The Import, Export and Transit Regulations (2011)
- III. The Contained Use Regulations (2011)
- IV. The Labeling Regulations (2012)

2. The four regulations ensure:

- I. Potential adverse effects to human health and environment are addressed upon open cultivation of GM crops.
- II. There is safe movement of genetically modified materials in and out of the country.
- III. Research on genetic modification is done under containment.
- IV. There is efficient tracking of GM products in the food supply chain and information availed to the consumer.

3. To date, the first three regulations of the year 2011 are operational, the labeling regulation of the year 2012 will come into place upon commercialization of GM crops in the country

# FACT 10



*Former Education Cabinet Secretary Dr. Fred Matiang'i and the Former chair NBA board Dr. Mary Amuyunzu-Nyamongo launching the labeling regulation for GM products*

# CROP TRAITS UNDER VARIOUS STAGES OF RESEARCH IN KENYA BY 2020



## KEY

**BARINGO, BUSIA, EMBU, KIRINYAGA, KITUI, KISUMU, KWALE, MERU AND TANA RIVER**

Bt cotton on-farm demonstration plots

**BUSIA - ALUPE, KILIFI - MTWAPA, MURANGA - KANDARA (THIKA)**

Cassava Brown Streak (CBD) introgressed into Cassava Mosaic Disease (CMD) tolerant background materials

**MAKUENI - KIBOKO**

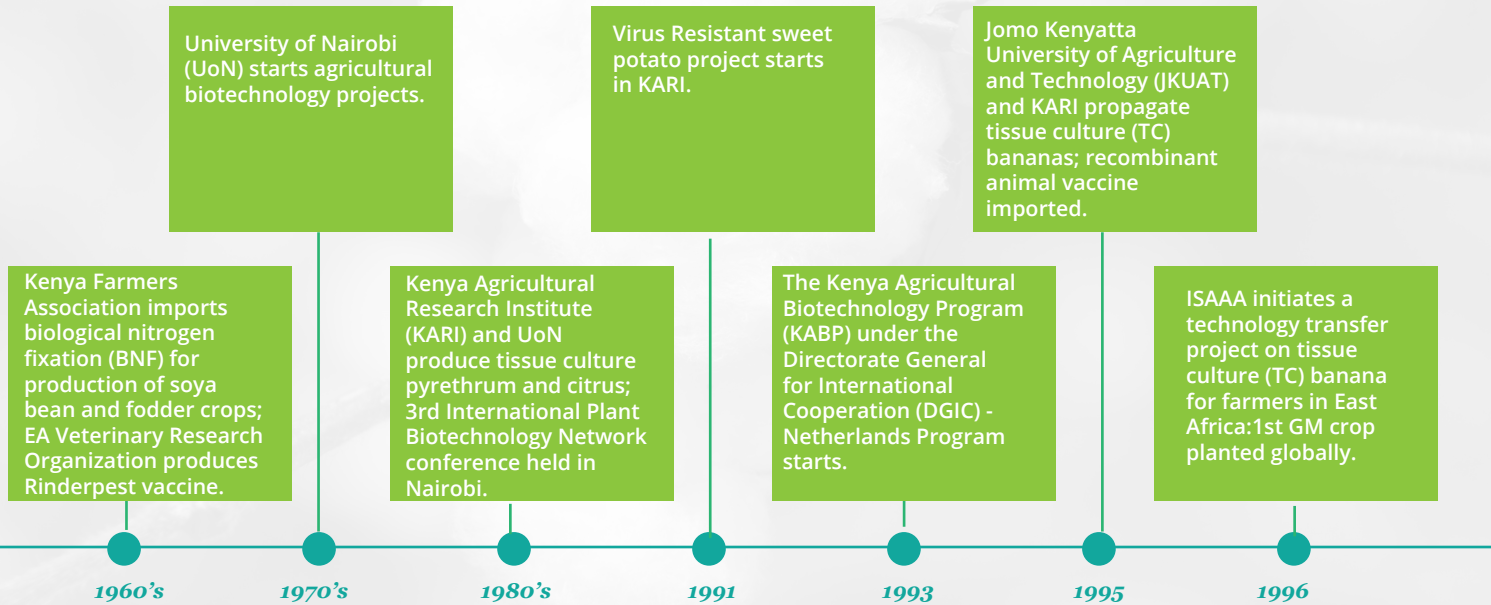
Insect resistant maize  
Sorghum with enhanced pro-vitamin A levels, Bio-available Zinc and Iron

**KAKAMEGA AND KITALALE**

Insect resistant maize



# MILESTONES IN AGRICULTURAL BIOTECHNOLOGY AND BIOSAFETY DEVELOPMENT IN KENYA



UNEP-GEF  
Biosafety project  
begins.

1997

National Commission for  
Science and Technology  
(NCST) publishes biosafety  
guidelines, launches  
National Biosafety  
Committee (NBC).

1998

KARI-CIMMYT  
launches the  
Insect Resistant  
Maize for Africa  
(IRMA) project.

1999

Kenya signs  
the Cartagena  
Protocol on  
Biosafety.

2000

Kenya ratifies  
Cartagena Protocol  
on Biosafety; Seeds  
and Plant varieties  
Act of 1972 amended  
to accommodate  
biotechnology.

2002

Biosafety Protocol  
enters into force;  
First drafts of  
Biosafety Bill and  
Biotechnology Policy  
are prepared.

2003

KARI Biotech  
Center launches  
Biosafety Level  
II Greenhouse;  
KARI begins field  
trials of insect  
resistant cotton.

2004

National  
Biotechnology  
Development Policy  
approved by the  
Cabinet.

2006

Kenyatta University  
Commissions  
the 2nd Modern  
Biosafety Level II  
Greenhouse.

2005

Biosafety Bill  
2007 published  
and goes through  
first reading in  
Parliament.

2007

Biosafety bill  
accented into law  
by the President.

2009

National Biosafety  
Authority (NBA)  
established.

2010

Cabinet approves importation of GM maize.

2011

Three sets of biosafety regulations (contained use; environmental release and; import, export and transit of GMOs) gazetted.

2011

Biosafety labeling regulations gazetted.

2012

NBA inaugurates the Annual National Biosafety Conference.

2012

Cabinet places a ban on GMO food importation.

2012

Biosafety Appeals Board and The Kenya University Biotechnology Consortium (KUBICO) are formed.

2014

NBA receives two applications for open field cultivation of GM maize and cotton.

2015

Association of National Biosafety Agencies in Africa (ANBAA) is launched.

2015

NBA gives conditional approval for open cultivation of GM maize and cotton.

2016

NBA receives an application for open field cultivation of GM *Gypsophila* cut flowers

2016

Bt-cotton Commercialization Taskforce created

2017

Bt cotton NPTs planted

2018

The cabinet approve open cultivation of Bt cotton

2019

NBA receives an application for open field cultivation of GM cassava

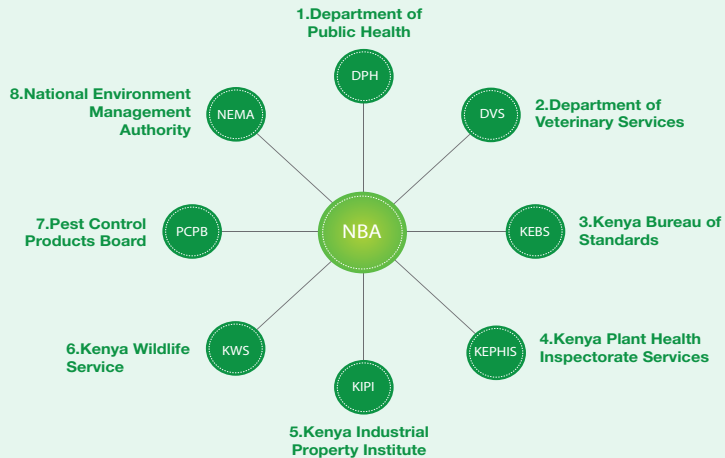
2020

Bt maize NPTs planted and Bt cotton on-farm demonstrations begins

# REGULATORY AGENCIES

In Kenya, regulation of Genetically Modified (GM) foods is a mandate of the National Biosafety Authority (NBA).

The National Biosafety Authority was established under Kenya Biosafety Act No. 2 of 2009. To achieve its mandate, NBA works closely with eight regulatory agencies.



## COPIES OF THIS FAQ CAN BE OBTAINED FROM:



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